

Possible Persons and the Problem of Prenatal Harm

Nicola Jane Williams

Received: 25 March 2013 / Accepted: 2 September 2013 / Published online: 25 October 2013
© The Author(s) 2013. This article is published with open access at Springerlink.com

Abstract When attempting to determine which of our acts affect future generations and which affect the identities of those who make up such generations, accounts of personal identity that privilege psychological features and person affecting accounts of morality, whilst highly useful when discussing the rights and wrongs of acts relating to extant persons, seem to come up short. On such approaches it is often held that the intuition that future persons can be harmed by decisions made prior to their existence is mistaken as identity is a most fragile thing with even the smallest differences in the conditions under which we procreate affecting not the interests of distinct future persons, but the identities of those who will come to exist in the future. Within this paper I reject this view, holding that a subscription to these two accounts need not result in the conclusion that virtually all acts relating to possible persons are permitted. Further, I argue that such accounts may in fact allow a great deal more scope for the determination of prenatal harms than accounts of personal identity that privilege physical features. Finally, by interpreting claims regarding causal identity such as Parfit's Time Dependence Claim in terms of Counterpart Theory I suggest that a solution to the non-identity problem can be found in the acceptance of, as relevant in prenatal cases, three kinds of objective similarity relations: *Biological*, *Environmental* and *Decisional* counterpart relations.

Keywords Counterpart theory · Future generations · Prenatal harm · Reproductive ethics · The non-identity problem · Trans-world identity

N. J. Williams (✉)

The Centre for Social Ethics and Policy, School of Law, The University of Manchester, Williamson Building, Oxford Road, Manchester M13 9PL, UK
e-mail: nicola.williams-2@postgrad.manchester.ac.uk

1 Introduction

As a small child I had a penchant for fairy tales and a *very* active imagination. Due to this, a large proportion of my time was spent wondering who I would have been had my mother met and married, not my father, but a king, making me a princess. My imaginings were vivid and I created, in my mind, an alternate version of myself whom I would visit daily in moments of boredom and in my dreams. ‘Princess Nicola’ looked very much like ‘me’ (although she possessed long golden curls and slightly rosier cheeks) and definitely was, in terms of character, like myself at that time in my development. However, in my imaginings ‘I’ wore beautiful dresses, lived in a castle, ate mainly boiled sweets and spent most of ‘my’ time riding around on my pony, kissing frogs and finding myself in mildly perilous situations. This was a far cry from my actual existence, which consisted mainly in school and a seemingly unending series of dance, drama, gymnastics and singing lessons. I had all but forgotten about this colourful internal world until two summers ago, when, during an impromptu game of tennis in the garden, my young cousin threw her racquet to the ground and rather unexpectedly stated “I wonder what I would have been like if daddy wasn’t my daddy and mummy had made me with someone else” and memories of *my* imaginings came flooding back.

Now, this kind of musing is apparently a relatively common phenomenon among armchair philosophers as well as children. For, in *Reasons and Persons*, Parfit mentions a woman who once wrote; “it is always fascinating to speculate on who we would have been if our parents had married other people.” (Parfit 1984, 351) He notes, somewhat scornfully, that by wondering such things she, and by association my cousin and childhood self, had ignored the obvious answer to our musings, which is *no one*. Our lives, in the way we had meant it, would, had our parents chosen to procreate with others, not have been like anything, as they would not have been ours. We would not have existed, and some other persons who may, or may not, have looked, acted and lived like us, would have existed instead. That our existence is highly precarious as “which particular future people will exist is highly dependent upon the conditions under which we and our descendants procreate, with the slightest difference in the conditions of conception being sufficient, in a particular case, to [ensure] the creation of a different future person” (Kavka 1982, p. 93), is an observation that has been made by many eminent philosophers such as Adams (1979), Kavka (1982), Parfit (1984) and Schwartz (1978).

It also tends to leave us with a problem when attempting to account for our intuitions in cases of alleged prenatal harm where such intuitions are *paired* with a person affecting account of morality according to which it is held broadly that nothing is good (bad) unless it is good (bad) for someone. After all, if our coming to exist is indeed as precarious as is suggested, *and* our acts can have no moral status unless it can be shown that they affect the interests of some actual person, it will often be the case when discussing the rights and wrongs of acts relating to possible persons that what seems to be a moral decision will affect, *not* the interests of existing or distinct future persons, *but the identities of who it is that will come to exist* in the future.

Depending upon the criterion of personal identity to which we subscribe, the scenarios in which we can determine the occurrence of prenatal harm and benefit will differ and so will the problems we face in accounting for our intuitions. Those, for example, who privilege physical features when determining what it is that makes one person the same person over change and time—such as the possession of a particular body (Thomson 1997) or being a particular biological organism (Olson 1999, pp. 125–153)—will have a much easier job of determining the occurrence of prenatal harm and benefit in cases where acts regarding possible persons can be viewed as attaching to a particular body or biological organism than those who hold that psychological continuity is that which is of importance for personal identity. After all, whilst it is easy to determine physical continuity between fetuses/embryos and persons who later come to exist, it is a far harder task to determine psychological continuity between fetuses and future persons.

Despite this, a subscription to a biological approach is not a panacea. Provided one subscribes to *any reductionist* account of identity and pairs it with the Person Affecting Principle there will be certain cases in which regardless of how much and long we look, the intuition that some child has been harmed or benefited prenatally by our actions cannot be accounted for. Such cases, when they arise, have come to be known as ‘Non-Identity Cases’, termed as such because they are subject to what Parfit calls the ‘Non-Identity Problem’ which, in its most simplistic terms, arises where our intuitions tell us one thing regarding the moral permissibility of an act but there is *no person-affecting reason* as to why this should be so. No one is harmed by a seemingly wrong action and no one is benefited by a seemingly right action as the act in question, far from causing harm or benefit to a particular person, should actually be seen as the cause of that person’s existence. The problem is also far more common than is often assumed and poses an “intriguing theoretical obstacle” for cases of wrongful life, prenatal injury, the use of genetic technologies to screen for and select out disease, questions of intergenerational justice, affirmative action, apology, and reparation for historic injustices (Heyd 2009, p. 5).

The following case constitutes a classic example of a non-identity case on both reductionist accounts of personal identity and will serve throughout this paper as a practical example to help ground our theoretical discussions:

The Reproductive Dilemma¹

Deborah and Edward have decided to have a baby. They have been together many years and are both in stable, well-paid jobs. Edward has just been given a promotion and Deborah’s work offers fantastic maternity benefits so they feel that the time is right to expand their family. They decide to visit a doctor before attempting to become pregnant to check that everything is working properly and they are both healthy enough to embark on the journey they have planned. The doctor gives them both a thorough examination, frowns, and sits them down to discuss the results. He tells Deborah that she is currently suffering from a rare and bizarre condition that will result in any child she conceives within the next five months being born with a painful – but not so

¹ Those familiar with the non-identity problem will recognise this case as a variation on a micro non-identity case set out by Parfit in ‘Rights, Interests and Possible Persons’.

bad as to make its life less than worth living – disability for which there is currently no treatment. Deborah and Edward are faced with 2 choices:

1. **Conceive** now and give birth to a child who will have a painful but not terrible disability.
2. **Wait** five months and conceive a child without a disability

Faced with *The Reproductive Dilemma* many of us judge that waiting is the *right* course of action to take. We believe that it is better to be born without a disability than with one. Such a belief tends not to cause too much controversy. Some particular condition or state of affairs is defined as disabling by its constituting a disadvantage or barrier for the interests of the one who suffers it. That which is not disadvantageous is not a disability and as such, any particular child is, *ceteris paribus*, more likely to live a happy and fulfilled life without the disadvantages that constitute disability. Yet, whilst such may well be the case, that it follows that it is morally preferable for Deborah and Edward to wait to conceive. After all, *if we accept* that our existence is highly precarious and hold too that our actions only have moral status when they affect the interests of distinct numerical persons, we can see that regardless of the decision Deborah and Edward make, their child will not be harmed. Different children will come to exist depending upon their choice. Any child conceived within the 5-months waiting period could not have been conceived after the wait and thus *could not* have been born without a disability and neither could any child born after the wait have been born with one. In other words, whilst the child conceived either before or after the wait can later say to his parents “I am glad that you chose to/not to wait as had you waited/not waited I would not have come to exist”, the child conceived during the waiting period, whilst he might dream of an easier life—just as I dreamed of being a princess—cannot claim that he has been harmed by his parents choice as to prefer that his parents had waited would be to prefer non-existence and his life is not so bad that such a preference would be rational.

When faced with such cases those of us who have previously accepted the propositions that lead to the generation of the Non-Identity Problem are often told we have two choices. We can deny that our intuitions in such cases have moral character, accepting that they represent nothing more than strongly held preferences (Bennett 2009) or we can deny the Person Affecting Principle in favour of some impersonal criteria for morality according to which the value or disvalue of actions should be measured in terms of their effects on the ‘world’ as opposed to specific individuals (Parfit 1984, p. 360). Such solutions, however, come at a cost some are unwilling to pay and there have thus, unsurprisingly, been myriad attempts to solve the Non-Identity Problem whilst retaining the Person Affecting Principle, or to lessen the sting of its implications for common sense morality.

This paper constitutes such an attempt and the driving force behind its creation is a strong commitment to both a person affecting account of morality and an account of personal identity over time which privileges psychological as opposed to physical features. Yet, whilst akin to many treatments of the non-identity problem in terms of its overarching aims, the route that will be taken throughout this paper is markedly different. For the question asked throughout is not, ‘Can we solve the non-identity

problem?’ but is instead ‘when and how can we determine that a particular person has been harmed or benefited prenatally in line with a commitment to both a psychological account of personal identity over time *and* a person affecting account of harm?’ By approaching the issue in this manner and examining more closely the steps that lead to the generation of different versions of the non-identity problem on this particular account of personal identity, it will be suggested that a solution to many of the problems we face when attempting to determine the occurrence of prenatal harms can be found.

We will begin by exploring firstly *why* those who subscribe to the psychological approach often have such a problem when determining the occurrence of prenatal harms. We will look then at *how* authors such as Parfit have attempted to marry the psychological approach in prenatal cases with an account of personal identity across different sets of probabilities/possible histories of the world. On this approach *particular essential properties or features* are held as allowing us to create links between possible persons across different possible worlds such that determinations of prenatal harm can be made even when two persons across possible worlds cannot, in any real sense, be said to share a particular psychology. This marriage will then be *explored* and *criticised*. It will be *argued* that whilst such an account proves useful and is understandable on an account of personal identity over time that privileges physical features, such is not the case on a psychological approach. For, on such an approach, if it is the case that any of our properties are essential to our coming to exist, such properties seem to consist in a sum of all of the features and properties that lead to the development of one as opposed to another psychology.

At this point, an alternative approach for linking both persons and potential persons across different sets of possible worlds will be suggested. This approach draws heavily on Lewisian Counterpart Theory (Lewis 1986, Part V), determining identity across possible worlds via looser relations of objective similarity, according to which a particular person in one world can be said to possess a counterpart in another when it is the case that certain persons in those worlds resemble him in certain relevant respects and to certain relevant degrees. With that done, the kinds of counterpart relations that allow us to determine the occurrence of harm in prenatal cases will be questioned and expanded throughout the final sections. This will ultimately lead to the conclusion that prenatal harms *can* be determined in far more scenarios than is most often assumed and, most importantly, in previously non-identity cases such as *The Reproductive Dilemma*.

2 Preliminaries: Personal Identity and Harm to Persons

How we should determine and what it means for a particular numerical entity to persist through time and change will often be a fundamental consideration for those who hold that persons are the relevant metaphysical units to which we should appeal when discussing questions of ethics. When we hold someone morally responsible for some particular action we presuppose personal identity, viewing that persons can only be responsible for their own actions. When we discuss whether we should uphold someone’s advance directive, whether she is the same person that wrote and

signed the document will often be at the heart of the issue we are discussing. Similarly, when someone who holds the marriage vow to be sacred asks if a man whose wife is in an irreversible coma should be condemned for leaving her for another woman, whether she should still be considered the person he married will be of great import. More pertinently to the issues at hand however, is that on a person affecting account of harm judgements regarding the occurrence of and the extent of a particular harm or benefit will differ depending upon the criterion of personal identity to which we subscribe.

On such an approach a harm or benefit is generally deemed to have occurred when it is the case that ones actions have adversely affected the interests of another or, in a counterfactual sense, when it is the case that the interests of another are in a worse condition than they would have been had one not acted in the way that one did (Feinberg 1992, p. 7). Judgements of whether harm or benefit has occurred are necessarily comparative and as such before deciding whether an act is harmful or beneficial or claim that an individual must be compensated for harm incurred, it must be determined that the individual whom we claim has been harmed is the *same person* to whom the harm occurred. Just as determinations of moral responsibility presuppose personal identity such that we can be responsible for our own actions but not for the actions of others, so too do harm claims presuppose personal identity as we may only determine the occurrence of and the extent of harms and benefits when it is the case that *we can identify that some particular person has been left in a worse or better state than they would have been had we acted otherwise*.

Often, when dealing with harm claims relating to persons, the theory of personal identity to which we subscribe will sit comfortably in the background. Regardless of what we believe to constitute the nature of personal identity and the persistence conditions for persons our conclusions will be the same. Yet, there are also cases where different accounts of personal identity will offer vastly different answers to the questions: has x been harmed/benefited by a particular act and if so, to what extent? A good example of such a case can be seen in a hypothetical scenario where to treat the severe and debilitating epilepsy of a patient, a doctor, having exhausted all other options has only one left: to perform drastic brain surgery which, should it go well, will cure the epilepsy but will irreversibly destroy a large proportion of the memories of the patient's life before the operation. On approaches that determine the persistence of personal identity via appeal to physical features, such an operation would surely be beneficial to our patient as despite memory loss he will be better off without his debilitating and painful condition. Yet if identity is determined in a different way, by appeal to psychological continuity for example, whilst such an operation will cure the epilepsy from which the patient suffers, there seems to be little benefit for *him* in agreeing to the operation as the person who will exist after the operation will, in lacking any memories of life before the operation likely be a different person.

With that stated, it should be apparent that before we may even begin to discuss questions of harm and benefit to persons or possible persons we must first determine the account of personal identity to which we shall subscribe. *This paper sits firmly in the psychological camp* holding after Parfit, that it is *not* the relation of identity itself that is important for personal identity over time. Rather, what *is* important are the

facts in which that relation consists: “psychological connectedness and continuity with the *right kind of cause*”, termed by Parfit ‘Relation R’ (Parfit 1984, p. 215). In accordance with this if x is a particular numerical person at time t and y is a particular numerical person at t^* : $x = y$ (or x is R related to y) *iff* y is psychologically continuous with x and $x =$ possibly y in cases where relations of continuity and connectedness are vague (such as in certain cases of brain damage and early childhood). The reasons for this subscription are many and varied and *will not*, for fear of re-treading an already well-worn road, be addressed here.

3 Harm Claims, Psychology and the Problem of Possible Persons

As can be seen in the previous section: when we claim, on a person-affecting account of harm that a particular numerical person has been harmed or benefited, either directly or indirectly, by the actions or inactions of another we are required, *before even beginning to discuss whether the act can be justified* to have done the following two things:

1. Ensure that we are appealing to the same numerical person both before and after the alleged harm or benefit has occurred.
2. Established a causal link between the act in question and the benefits or burdens that have been imposed on the numerical person to whom we are appealing.

A particular numerical person (P), defined as such by relations of psychological continuity and connectedness, will thus be harmed by the actions of another particular person (Q) *only* when it is the case that P’s interests are left in a worse state after the actions of Q *because* of Q’s performing such actions. The same is true for any sentient being (S). S is harmed by Q’s actions only when it is the case that S’s interests are left in a worse state than they would have been had Q not acted in the way he did. Again, such is true for fetuses and embryos.

The interests of embryos and fetuses, however, are limited. They, despite being a *phase sortal* in the life of an organism of which a latter stage is personhood, should not be viewed as persons or as possessing the same interests as persons as they possess none of the capacities generally thought to be required for personhood. They are not thinking intelligent beings; they have no capacity for reason, or for reflection (Locke 1924, Book II, Chapter XXVII). They possess neither representational or meta-representational abilities, nor a concept of self (Tooley 1972, p. 44). They cannot value their own lives (Harris 1985, pp. 16–17) or even feel pain until the 17th week of gestation when the thalmo-cortical connections necessary for pain perception are developed. Actions or inactions that we might normally deem to have harmed or benefited persons may not, when done to them, automatically result in judgements of harm or benefit. Consequently, whilst we might harm a fetus after the 17th week of gestation if we operate on it without anaesthesia by causing it pain we would not harm it by performing an abortion as despite the fact that abortion ends a life, a fetus, in lacking an interest in the continuation of its own life, cannot be said to be harmed by death.

This will be deemed irrelevant to considerations of prenatal harm in cases where harm can be straightforwardly attributed to the interests of the foetus or embryo itself, but generally, when making harm claims relating to *possible persons* such is not the case. This is so as harm claims relating to possible persons tend not to focus upon the harms that may be incurred by *the embryo or foetus* as a result of our actions but instead upon the harms that acts done to them might incur upon *persons* that will come to exist in the future. Again, this would not matter *if* it were the case that foetuses and embryos could be viewed to be the same numerical entities as persons, but by subscribing to a psychological account of personal identity over time such a claim cannot be sustained. In lacking the capacities required for personhood, embryos and foetuses, despite being identical to an organism which will, *ceteris paribus*, later *be* a numerical person, are *de facto* not candidates for being numerically identical to any person that will ever, or could ever, exist. Such a point is put well by Jeff McMahan when he notes regarding newborn infants (and for the same reason embryos and foetuses):

Their mental life is so sparse that there cannot be more than a few direct psychological connections from day to day. It therefore follows that [a] two day infant cannot be strongly psychologically connected with itself the day before, that there is therefore no psychological continuity in infancy, that none of us now is psychologically continuous with a new-born infant, and thus that none of us is now numerically the same individual as a new-born infant. (McMahan 2003, p. 45)

4 Appealing to a Causal as Opposed to Evaluative Sense of Identity in Cases of Alleged Prenatal Harm

This obviously causes us a problem when attempting to determine the validity of prenatal claims of harm and benefit. For, there seems to be no *necessary* link in terms of a shared personal identity over time between persons and embryos/foetuses. Yet, despite this, when it is intended that an organism that possesses the potential for personhood should develop into a person we still view that we cannot do just what we will with it. We often claim that a pregnant woman should take vitamins in order to ensure the health of her future child, that she should not smoke, that she should do her best not to expose herself to people with rubella and toxoplasmosis and that her doctor should not prescribe her teratogenic drugs such as thalidomide lest exposure to such things should cause her future child to be born with a disability. We make these claims because despite the fact that foetuses and persons cannot share a personal identity, we view that they are importantly linked together through the foetus' possession of, not only the properties that will allow for the development of personhood at some future point in the life of their organism, but also of certain distinctive features that determine, either fully, or in part, the identities of those persons who will come to exist in the future.

These distinctive causal features, or as Parfit terms them 'distinctive necessary properties' thus play a large role in our determinations of prenatal harm or benefit

for those who subscribe to the psychological approach and are defined as those features that any particular person (P) could not exist without as “If characteristics (C) are identity determining for P, then any child born with characteristics different from C *would* have been a different person from P (even if all other characteristics were the same).” (Wolf 2009, p. 102) With this in mind, when discussing the validity of claims of prenatal harm or benefit, the sense of identity we utilise must be importantly different from, although still compatible with, the sense of identity we utilise when attempting to determine the validity of claims of harm and benefit in relation to actual persons with distinct numerical identities. For such claims relate less to the answers we give to questions of personal identity over time and more to the answers that we give to questions regarding how to identify individuals across different possible histories of the world/sets of possible states of affairs.

Whilst we may not then, if we wish our discussions to have any semblance of meaning, ask in cases where we have a person x who claims to have been harmed prenatally: “is x the same numerical person both before and after the occurrence of the alleged harm or benefit?” as x cannot be the same person as the foetus/embryo (pp) from which he developed, *we may ask instead*: Was pp in possession of the distinctive causal features that were necessary for the coming to exist of x? And if so, was pp in possession of such features both before and after the alleged harmful act?

When we answer these two questions in the affirmative it is suggested that we can judge that x has been harmed by acts that were done to pp. For, provided it is the case that were it not for the act in question a numerical person with the same necessary causal properties as x would still have come to exist and would have been better off, our judgements of harm and benefit should conform straightforwardly with similar judgements regarding extant persons. For, across different possible histories of the world it is the case that all numerical persons or possible persons with the same distinctive necessary features as x are held to be either x or were, at some point in their existence candidates for being x. In possible worlds where a person with x’s distinctive necessary properties would have been better off had we not acted in the way that we did, *and there are no justifying reasons for our acting in such a way*, it is thus held that x may justifiably feel aggrieved. When, however, we answer either question negatively it will be judged that x cannot have been harmed by acts done to pp and this will be so for one of two reasons:

1. pp’s causal features/properties were not compatible with the coming to exist of x and we have made a mistake in pairing these two entities as anything done to pp *could not* have affected x’s interests.
2. The act in question altered pp’s causal features/properties such that it is the case that only after the act in question could we legitimately pair x and pp’s causal features/properties as the act in question, far from causing harm or benefit to x is actually the reason for his existence as had we not acted in the way that we did x would not have existed and some other person would have come to exist instead.

Yet, what are these causal features that we could not exist without and that determine the validity of claims of prenatal harm? Were we to subscribe to a

biological account of personal identity over time the answer to our question would be simple. On such an account it would be the case that foetuses and embryos were already in possession of the feature that grounds claims to both prenatal and personal harms—their organism. From the moment of conception, despite the changes in shape, size and moral status that occur throughout its lifespan, the numerical identity of any living organism is set by the elementary particles from which it is constituted. It will remain that entity until that organism is no longer living and, provided that organism develops to have interests, such interests can be affected by any act regardless of whether or not that act was done to it whilst it was not a person.

On the psychological account however an answer proves a little more elusive. The causal properties to which we must appeal cannot be those psychological features that ground our claims of personal identity over time and must instead be the properties which would allow for the development of a particular psychology. Consequently, we must ask, what would have made it such that *we* would not have existed? What features or properties were necessary for our coming to exist? Not the particular versions of ourselves in existence now, but the earliest versions of ourselves from which our identities could have branched, *those whom we properly identify as ourselves across different possible histories of the world/sets of possibilities*.

5 Parfit's Account of Causal Identity: The (Strong) Time Dependence Claim

As the approach regarding what is important in personal identity over time taken in this paper has much to owe to Parfit it would be imprudent not to give serious consideration to his account of what constitute the causal features that were necessary for our coming to exist. On his account, what would have made it true that we never came to exist is as follows (albeit with 'one qualification'):

The (strong) Time Dependence Claim (TDC1): if any particular person had not been conceived when he was in fact conceived, it is in fact true that he would never have existed. (Parfit 1984, p. 351)

There are thus three claims that we might interpret the TDC1 to include and they are as follows²:

1. *The Origins Claim:* Our material origins are necessarily determinative of our personal identities and we could thus not have come to exist had we not been constituted from anything other than the particular matter from which we were actually conceived.
2. *The Temporal Claim:* The timing of our conception was necessarily determinative of our personal identities as they currently stand and we would therefore not exist had we not been conceived when we were actually conceived.

² My decision to format the different claims inherent in the TDC1 as a 3-point list should be attributed to Wrigley, who in 'Genetic Selection and Modal Harms' also distinguishes between the modal claims inherent in the TDC in the same way.

3. *The Genetic Claim*: Our exact genome is necessarily determinative of our personal identities and we could therefore not exist possessing a different genome.

The first claim in the list: *The Origins Claim* leaves the TDC1 looking remarkably like the view regarding distinctive necessary properties that would be held by those who subscribe to a physical account of identity such as the biological criterion and this is so because, for those who subscribe to such an approach it is. Indeed, Parfit terms this approach ‘The Origin View’ in homage to the fact that it can be recognised as a version of the ‘Necessity of Origins’ view forwarded by Saul Kripke after a long discussion regarding whether Queen Elizabeth could have been born naturally of different parents. The view is as follows: “If a material object has its origin in a certain hunk of matter, it could not have had its origin in any other matter.” (Kripke 1980, p. 114) This implies that just as a particular wooden table could not have been made from anything but the particular piece of wood from which it was actually made, so too could a particular human being such as Queen Elizabeth II not have been constituted from anything but the gametes from which she grew.³ In itself, this claim is relatively uncontroversial, as it represents nothing more than the basic metaphysical fact that all physical things could not have had their origins in anything other than the physical things (read: elementary particles) from which they were constituted.

Yet, as the psychological account denies that our physical identity is what is most important for persistence *The Origins Claim* actually ends up telling us very little about the ways in which we could have been different. Consequently, when we view *The Origins Claim* as a modal claim representing the possibility of existence across possible worlds as being determined by strict genetic origin it becomes of little use to us (Wrigley 2006, p. 508). For our concern here is *not* with the requirements of how a particular physical thing can come to be. Instead, we are asking under what circumstances and in accordance with which criteria a *particular person* could come to exist in different possible histories of the world. Thus, as our being a particular person consists in the persistence of a certain psychology, our possession of, or embodiment in, certain biophysical materials is of only instrumental importance to us in so far as such features will impact upon the psychological features that determine numerical identity.

The claims then of most relevance to us, regarding distinctive necessary properties, are those of the second and third claims inherent in the TDC. Now, the genetic claim is relatively lucid, being the claim that we could not exist were we to

³ This claim is actually slightly misleading. For, as Elliot and Gallois point out in their short but devastatingly perceptive paper “Would it have been me?”, whilst the necessity of origins view demands that an object could not have had its origin in anything other than its actual origins, this does not necessarily mean that a table could not have been constituted out of a different piece of wood than that from which it was originally constituted or that a child could not have been conceived from anything other than the particular egg and sperm from which it was actually conceived. What is important is the configuration of elementary particles and not the object itself meaning that in some possible world it could be the case that a particular table could be made and a particular person could have been conceived from a different piece of wood or different gametes provided the self same elementary particles from which they were actually created were present and arranged in a specific way.

not possess the exact genome that we actually possess as “differences in material make for later differences in virtually all aspects of a person: Change the sperm, and there will be substantial changes (of both a physical *and* psychological kind) in the later human being” (Belshaw 2000, p. 269). *The Temporal Claim*, however, can be understood in at least two ways. First, it can be understood as relating to scientific facts regarding the timing of the female menstrual cycle and if so may merely be another way of expressing *The Genetic Claim*: If it is the case that we could not exist were it not for the meeting of the two specific gametes from which we were actually conceived, it is the case that we would have to have been conceived within a month of the time (at most) from which we were actually conceived. We might also however, understand it as recognising the importance of the environment to personal identity and it could thus be of relevance to questions regarding the ethics of decisions relating to the timing of the implantation of frozen embryos (Belshaw 2000, p. 272).

6 How Should We Understand the Time Dependence Claim on the Psychological Account?

Barring the second understanding of *The Temporal Claim*, we might note that the TDC still looks remarkably like the approach that would be taken regarding distinctive necessary properties by those who adhere to the somatic approach as it still amounts to the claim that in any possible world, only those who possess the same genome have the distinctive necessary properties that would allow them to be considered the same person. It is however, also compatible with psychological approaches as whilst our possessing a particular genome/being conceived from the two particular gametes from which we were actually conceived, is viewed as necessary for our becoming the particular numerical entities we are, the TDC1 does not state that this is a sufficient condition for our existence. Thus, whilst compatible with both reductionist accounts of personal identity over time, the implications of the TDC1 on these accounts are markedly different.

This can be seen when considering the different possible histories of the biological entities that eventually became each one of us. According to the Biological/Kripkean approach, regardless of the environment in which a genetic individual develops and how his personality is shaped by his circumstances, his personal identity will remain the same as it is determined by either his genome or his origins in the elementary particles from which he was conceived. Across all possible worlds, the possession of a particular genome should thus be viewed as both necessary and sufficient for our being the same persons. This means, for example, that even if the parents of the genetic individual who eventually became me had, in some possible world, when she was an infant, dropped her on her head resulting in her having a severe intellectual disability or had died in a car accident, leading to her being sent to live with her Uncle Oleg in Volgograd, learning Russian as her first language and eventually becoming a famous gymnast (instead of becoming a perpetual student with no known cognitive problems and two very much

alive parents who raised her in the South of England) she would still be the same numerical person.

According to the TDC1 on the Psychological Approach, however, this would not be the case. For, although ‘Intellectually Disabled Nicola’ (IDN) ‘Actual Nicola’ (AN) and ‘Russian Nicola’ (RN) would share the same genetic origins, would all have possessed the same distinctive necessary properties and were thus, at their pre-personal stages candidates for being the same numerical person, they would not now likely be sufficiently psychologically connected with one another that we may say that they are importantly the same person, despite the fact that their origins made it such that they could have been. Thus, on the psychological approach the TDC1 should be read as a statement that whilst it is *necessary* for the existence of a particular person that he was conceived from the two gametes from which he was actually conceived, this condition is not *sufficient* for his existence. Regardless of whether it is fulfilled, the genetic origin of a particular potential person is the self same genetic origin of a potential myriad of other potential persons who may or may not have come to exist had things turned out differently, depending upon how the genetic determinants of their identities were shaped and influenced by environmental factors.

7 A Marriage Made in Heaven: How a Subscription to the Time Dependence Claim Helps Account for Our Intuitions in Cases of Alleged Prenatal Harm

When closely examined, the TDC1 does seem to sit well with the psychological approach. After-all, it is pleasingly straightforward and not as overtly genetically essentialist as it may at first seem, viewing our origins as necessary but not sufficient for existence, and thus of causal but not evaluative importance to personal identity over time, allowing that our environments still have a large role to play in the development of personal identity. This means that we need not accept that RN and AN are the same person, or that Queen Elizabeth II could have been conceived by different parents but also allows us, by looking to genetic origins, to differentiate between entities such as embryos and fetuses that on the psychological account of personal identity over time would seem, *prima facie*, to possess no relevant distinguishing features at all.

More importantly however, that the TDC1 gives us a set of causal properties which, whilst not *sufficient* for the existence of any particular numerical person are still viewed as necessary, means that those who adhere to the psychological account are able to place limits on the kinds of behaviours that are morally acceptable regarding potential persons. On the psychological account even the smallest environmental changes are identity implicating, leading to the unfolding of a wholly different psychology and the existence of a different person. Without such a causal claim distinguishing between potential persons and creating links between *certain* of them across possible worlds, those who adhere to the psychological approach would be forced to argue that nearly every decision made in relation to possible persons would be morally benign. How, after-all, can we suggest that a pregnant woman should not smoke, drink too much wine or expose herself to teratogenic

substances during pregnancy if such actions will not harm her unborn child but will instead determine that one child, as opposed to another will come to exist? How can we justify the compensation that was awarded to the ‘victims’ of the thalidomide disaster of the 1960s if it turns out that Grünenthal, the pharmaceutical company that produced and approved thalidomide as safe for use in pregnant women, did not harm any of the children that came to exist after their mothers unwittingly took the drug, but was instead responsible for their very existence?

Such claims and judgements rely upon our holding that the above actions and inactions will not importantly determine the ‘identity’ of potential persons but will instead bestow, either directly or indirectly, harms and benefits upon a discrete entity. Yet, a straightforward reading of the psychological approach will, as we have seen, yield no such determination. By pairing the psychological approach with the TDC1 we can therefore save our intuitions in such cases, arguing that whilst these actions are indeed identity affecting and *will* result in the existence of different persons, each of these resulting persons, in possessing *the same distinctive necessary properties* constitutes a *branch* on a possibility tree inherent in these properties and that thus, provided we have a conception of what is good for a particular individual once born, may legitimately be conflated when we are making determinations of prenatal harm and benefit.

8 Grounds for Divorce? Why a Lack of Sufficiency Places a Psychological Subscription to the TDC1 in Jeopardy

In doing away with *The Origins Claim* those who, on the psychological approach, note the utility of the TDC in matching our determinations of harm and benefit in most genesis cases, however, are faced with a problem. For without the sufficiency claim inherent in The Origins View there seems to be no justifying reason for those who subscribe to the psychological approach to accept that a common origin in a specific set of gametes or the possession of a particular genome should, by itself, constitute reason enough to link distinct numerical persons across possible worlds. On the psychological criterion, numerical identity can survive change and a particular numerical person can be very different in different possible histories of the world due to the branching off of a psychology from a common origin in one of a number of ways. However, whilst such is the case a common origin in a particular genome does not seem to be the right *kind* of origin to make determinations of trans-world identity.

For, whilst the former “develop from and preserve connections with a psychology already extant” (Belshaw 2000, p. 267), and can be identified across possible worlds by reference to points in which their psychologies overlap, the existence of the latter depends upon not only the properties inherent in their genomes, but also the environmental events which caused these distinct psychologies to unfold. Thus, the “distinctive necessary properties” of any particular person seem to consist in the *sum of all* of the causal factors that came to influence the development of their psychology, and the possession by certain individuals across possible worlds of some of these features, such as a distinct genome, is *not*

enough to imply trans-world identity. Exact similarity of genetic origins does not, on the psychological approach, imply causal identity and whilst the different potential identities of a particular foetus all share in common a distinct genome, it is not at all clear why this should be enough to identify such features as implying relations of trans-world identity.

Indeed, on the psychological approach, the only kind of essentialism, defined as “the view that individual things have essential properties, where an essential property of an object is a property that that object could not have existed without” (Mackie 2006, p. 1), that truly seems compatible is a kind of Leibnizian Hyper-Essentialism according to which any and all properties held by an individual that have contributed to the genesis of a particular identity are necessary for their very existence as without them a different person would exist (Leibniz 1989, pp. 72–73). RN, IDN and AN are *not* the same person and *nor* are they candidates for trans-world identity. Such is the case as *any* individual, in any possible world, whose causal properties in that world differ from the causal properties of another specific individual, *cannot* be viewed as the same person, even if they are exactly similar in nearly all respects.

9 A Route for Reconciliation? A Counterpart Theoretic Understanding of the Time Dependence Claim

What then, is to be done? A subscription to the psychological approach without a causal account of identity leaves us with the uneasy conclusion that virtually all acts relating to possible persons are permitted. A subscription to the TDC1, although helping to account for our intuitions in cases of alleged prenatal harms, is a subscription that arbitrarily picks out certain features as essential for our coming to exist despite the fact that the only essentialism that truly seems compatible with the psychological approach is one like that forwarded by Leibniz. With this in mind, it is suggested that on the psychological approach the best way to make sense of claims relating to trans-world identity and possible persons that does not collapse into a list containing *all* of the causal factors that lead to the development of one as opposed to another psychology and *confirm* that virtually all acts relating to possible persons are permitted, is to appeal to a different, non-essentialist, modal basis for determinations of identity across possible worlds where the criteria are *slightly* looser.

Such a basis, it has been suggested (Wrigley 2006, 2012; Meacham 2012), can be found in Lewis’s modal realism (Lewis 1986) according to which trans-world identity is determined not by reference to essential properties or strict identity relations, but instead via counterpart relations, defined as objective similarity relations (Divers 2007, p. 42). This view, I suggest, fits best with the psychological approach as it allows us to *separate* identity within worlds from identity across worlds. For on this approach, it is held that the world in which ‘we’ actually exist is just one of many worlds like it, all of which are spatiotemporally isolated from one another, concrete, abundant and satisfy a principle of restricted recombination according to which shape and size of the world permitting, any number of possible

things can exist alongside each other or fail to do so. As these worlds are isolated from one another, particular individuals can exist in *only* one world, no individual will be identical to an individual in another world and thus identity across possible worlds is determined via counterpart relations, where, “In general, and independently of any specific context, the counterparts of an individual *x*, are those individuals that are similar to *x* in some relevant respects and to some relevant degree.” (Divers 2007, p. 44) Accordingly, the truth of a *de re* modal claim such as “AN is possibly a Russian gymnast/intellectually disabled” is determined, not by whether they are the same numerical person, as across worlds this is *impossible*, but instead by whether AN has, in a different possible world, a counterpart who is a Russian gymnast or is intellectually disabled. As the criteria for identity across possible worlds are less strict on this approach and there is no possibility of our existing in worlds other than our own, just the possibility of the existence of counterparts whom we deem to be similar to us in certain relevant ways, we have the required modal basis to argue that identity across possible worlds may be determined in a different way to identity within worlds, depending upon which similarities we accept as giving rise to counterpart relations.

Yet, despite this, the question of what these similarities are and how their relevance should be decided must be answered. If any and all similarities were allowed on a counterpart theoretic approach, it could be argued that all persons, by being *homo sapiens*, are candidates for being my and your counterparts and the most imaginative of us could even argue that each of us could have been a banana, a talking canine or even a self aware home security system. If such were the case, we would “have abandoned any useful means of specifying individuals across possible worlds on the grounds that any possible entity could be one’s counterpart.” (Wrigley 2006, p. 180) Such a reading is, however, erroneous for, as Lewis notes when describing the counterpart relation, in order to be considered our counterparts, otherworldly individuals must resemble us “closely in content and context and in important respects...[and] more closely than do other things in their worlds.” (Lewis 1971, p. 206) As such, whilst it is the case that “the kinds of properties that are relevant and the stringency of the relations that’s required, is something that can vary from context to context” (Meacham 2012, p. 260), due to this context sensitivity it will be the case that when we are asking specific questions about who, across possible worlds should be considered the counterpart of a particular numerical person, the counterparts available to us will often be very limited in number.

On the psychological approach paired with the TDC, then, we can note that there will be two relations of objective similarity which should be viewed as relevant when determining personal identity across possible worlds. The first of which consists in the sharing of a common psychology which we shall call ‘*branching counterpart relations*’ according to which those who share a common psychology, whether it be linear or branched, should be viewed as my counterparts *in virtue* of their possession of this shared psychological history. Any and all persons across possible worlds that have branched from this common psychology will be my counterparts and depending upon the properties that they possess, such as being *x*, doing *x*, and so on, I possess the property “could have been/done *x*”. Such a

counterpart relation will be relevant when making harm claims regarding extant persons.

The second relevant relation consists in the sharing of a distinct genome,⁴ which shall be termed '*genetic counterpart relations*' and it is viewed as relevant in virtue of the fact that individuals who share a genome could have, *despite differences in numerical identity*, had environmental events lined up in different particular way, been virtually indistinguishable from one another. If we return to the example given earlier in the paper of embryo 'N', who, in this world eventually became AN, but in another became RN, we can note that despite the fact that they are different numerical persons in both having a common origin in the possibility set inherent in N, RN is a *genetic counterpart* of AN as she stands in an objective similarity relation to AN due to this origin. Consequently, as there is a possible world in which N became RN, AN possesses the following properties: could have been an orphan, could have been sent to live with her Uncle Oleg in Volgograd, could have learned Russian as her first language and could have been a gymnast as her counterpart possesses these properties.

Regarding prenatal harms then, provided we have a concept of what broadly constitutes a good or a bad life and can make comparisons between lives, where it is the case that two numerical persons (x and y) share a *branching/genetic counterpart* relation and x is better off than y *as a result of a particular course of action* taken by another, we can state that in being x's counterpart y is harmed by this action. Relating to a particular prenatal case of harm—provided that we view it is better for a person not to have an intellectual disability than to have one—as AN and IDN should be viewed as *genetic counterparts*, that AN is better off than IDN as she was not dropped on her head as a baby, we can state that IDN was harmed by this particular action as she possesses a counterpart, AN, who, in not being dropped on her head, is better off in lacking IDN's intellectual disability. The same can be said in thalidomide cases. For if we view that the birth defects associated with prenatal ingestion of thalidomide such as Dysmelia and Phocomelia are harmful features, for each thalidomide victim (TV) there will, across possible worlds, be a different numerical person who shares a *genetic counterpart* relation with TV who is better off *in virtue* of her mother not ingesting thalidomide whilst she was in the womb. In having such a counterpart TV possesses the property 'could have not been prey to the harmful congenital defects associated with the ingestion of thalidomide' and can thus claim to have been harmed by her mother's ingestion of thalidomide.

10 A Return to the Non-identity Problem

By subscribing to both a counterpart theoretic account of trans-world identity and the TDC as providing the relevant counterpart relations necessary for determinations of harm and benefit in cases of prenatal harms, those who hold that psychological connectedness and continuity is that which is key for personal

⁴ I have separated these counterpart relations from one another in virtue of the fact that, whilst most of my psychological counterparts, will also be my *genetic counterparts* it is the case that in certain scenario's this would not be the case, such as in Parfit's Teletransporter Case set out in *Reasons and Persons* and cases of fission.

identity are thus able to account for their intuitions in a great many cases where it is commonly viewed that an act done to one numerical entity will result in harms or benefits for a different numerical entity in spite of a lack of connectedness and continuity. Yet, despite this, holding only *genetic counterpart* relations to be relevant in cases of prenatal harm still leaves us with a problem in accounting for our intuitions regarding the occurrence of harm in cases such as *The Reproductive Dilemma* in which our intuitions tell us that Deborah and Edward should wait to conceive and our account of the features necessary for determinations of trans-world identity tells us another:

By subscribing to the TDC as providing the relevant counterpart relations necessary for determinations of prenatal harms, our intuition is still mistaken. Regardless of the decision Deborah and Edward ultimately make, their resulting child *cannot* be harmed prenatally by their decision. For as it is the case that in order to be identified as sharing an identity across possible worlds two numerical persons must share either a branching or a *genetic counterpart* relation, and the possible results of their decision will share neither, there is no reason that attaches to the interests of their offspring that should sway their decision in either way. Any child conceived within the 5 months waiting period could not possess the distinctive necessary properties of any child conceived after the wait and thus *could not* have been born without a disability and neither could any child born after the wait have been born with one.

If cases such as *The Reproductive Dilemma* were few and far between, it might be tempting to ignore them or to bite the bullet with respect to them and argue that our intuitions represent little more than strongly held preferences, akin in many senses to the preferences of the hardened/pretentious coffee drinker who derides those who choose to sully their daily caffeine fixes with milk. Yet, when it is the case that the problem occurs on a macro scale our intuitions are harder to bury due, in main, to the volume of persons that we intuit will be harmed. An example of such a case is as follows:

The Policymakers Choice⁵

A group of policy makers are faced with the choice of deciding between certain policies concerning how best to make use of our natural resources. After much debate and deliberation they have been able to whittle down a very long list of potential candidates to just two:

1. The first policy is entitled **Depletion** and it involves just that, the depletion of our natural resources and the cessation of research into viable alternative energy sources. Adopting this policy would mean that for the next two hundred years we, and our descendants, will live very comfortable lives as the money that would have been spent on research will be spent on community enrichment activities and our natural resources will allow for frivolous energy consumption. After those two hundred years however, because we will have depleted our resources, our descendants will live relatively miserable lives until they manage to find suitable alternatives and will have to spend a great deal more money on

⁵ This case is a simplified version of a non-identity case regarding the choice of one of two social and economic policies set out by Parfit in *Reasons and Persons*.

research and development, leaving little money left to supplement the lifestyles that citizens have been used to.

2. The second policy is entitled **Conservation** and requires that we be sensible with our resources, living lives of slightly less comfort than in **Depletion** in order to ensure that two hundred years down the line our descendants will live much happier lives than they would under the depletion policy.

Faced with *The Policy Makers Choice*, we tend to view that *Conservation* would be the right policy to choose as a little sacrifice on our parts will lead to great benefits for future citizens, whereas in *Depletion* we would not gain so much as future generations would stand to lose. Yet again our intuitions are mistaken. For if it is the case that our counterparts across possible worlds can only be those whom have branched off from a common psychology or who share the same genetic origin, there is no reason to choose conservation by appealing to the interests of future people. After all, as these policies will affect the ways in which people live out their lives, people will likely meet/marry different people and conceive children at different times, increasingly over time different people would exist depending upon our policy choice. After a few hundred years the entire population would likely be made up of people who would and could not have existed had the other policy been chosen. Therefore, whilst the persons in existence under *Depletion* would undoubtedly live far less comfortable lives than those under conservation, they would not exist had the other policy been chosen and vice versa, meaning, once more, that provided their lives were on balance worth living they cannot claim to be harmed by our choice as had the other choice been made they would not have come to exist (Parfit 1984, pp. 361–366). Indeed, as *Depletion* would actually serve to benefit those already in existence whilst causing harm to no one and *Conservation* would place burdens on those already in existence whilst providing no tangible benefits to future persons it seems that *Depletion* may, on balance, be the most beneficial policy choice.

We must thus ask again, what is to be done? Were we to come to the same conclusions in cases such as those above from an essentialist standpoint the answer would be nothing. For what is important in personal identity is our being a particular organism and a particular organism necessarily has its origin in the particular things from which it was constituted, meaning no person can claim to have been harmed prenatally (or pre-prenatally as in *The Policy Makers Choice*) in cases such as those above. Thus—unless we are to appeal to the interests of other persons or abandon the person affecting principle in favour of some non-person affecting moral principle—there is little room for manoeuvre. On the psychological approach, however, there may well be a glimmer of hope, an appeal to certain other features as constituting relevant counterpart relations and grounding claims to prenatal harm. It is this that shall be explored in the following sections.

11 Examining the TDC: Can We Loosen the Criteria for Trans-World Identity to Include Slight Genetic Variance?

Whilst a subscription to counterpart theory can allow us to make sense of the genetic claim inherent in the TDC by viewing the sharing of a distinct genome, *in*

virtue of its identity determining features, as a relevant relation of objective similarity giving rise to counterpart relations once we subject the TDC1 to close scrutiny, a flaw emerges. As on the psychological approach our genes are not in possession of magical properties (Wolf 2009, p. 100)—whilst those who share my genetic origin should be viewed as my counterparts—why it should be the case that *only* those who share my genetic origin⁶ may be viewed as such is unclear. For whilst it is almost impossible for us to imagine our having a different genetic origin yet still being the same persons we are today, the fact that we find this idea difficult to grasp does not mean that its being the case is not a logical possibility. Indeed, as one considers this it becomes gradually more apparent that certain aspects of our genetic inheritance do not seem to be as necessary for the development of our personal identities as the TDC1 suggests and questions regarding whether we could still be the same persons with a slightly different genetic code begin to be met (in certain cases) in a hesitantly affirmative manner. How important, after-all, was the natural colour of my hair for the development of my psychology? Could I have a dark haired counterpart? How important was my eye colour? Must all of my counterparts have blue eyes?

Whilst such examples might be questioned, there are straightforward cases where it seems that a change in genetic code at the prenatal stage of development should not compromise the development of a particular psychology. For if we are to look at adult onset genetic disorders such as Huntington's or the cancers associated with the BRCA1/2 or FAP mutations which present symptoms only later in life, it seems that if it became possible to repair, switch off or replace the affected mutated genes with 'normal' genes prenatally, a change in genetic make-up in such cases would not necessarily imply a change in identity unless such changes were also accompanied by identity affecting environmental changes. In these cases it would seem that an individual in world *w* possessing a BRCA2 mutation might well have a counterpart in worlds other than his own who is not in possession of a BRCA2 mutation and as such would possess the property 'could have lacked the BRCA2 mutation'.

Parfit himself pre-emptes some similar questions regarding the idea that perhaps our *exact* genomes are not as necessary for determinations of trans-world identity as the TDC1 suggests in the following paragraph:

Suppose that my mother had not conceived a child at the time when in fact she conceived me. And suppose that she had conceived a child within a few days of this time. This child would have grown from the same particular ovum from which I grew. But even if this child had been conceived only a few seconds earlier or later, it is almost certain that he would have grown from a different spermatozoon. This child would have had some, but not all my genes. Would this child have been me? (Parfit 1984, p. 352)

Parfit suggests that the answer to his question may not be able to be found, that the child may well have been him/his counterpart, may not have been him/his counterpart or that his identity might have been indeterminate (Parfit 1984, p. 352).

⁶ Or have a psychology that has later branched off from a being with my genetic origin and now reside in a body with a different genetic origin.

In light of this, he proposes a weaker version of the time dependence claim, as he wishes the TDC to be ‘uncontroversial’ on *all reductionist accounts of personal identity*, including his own, the TDC2:

The (weak) Time Dependence Claim (TDC2): if any particular person had not been conceived within a month of the time when he was in fact conceived, he would, in fact, never have existed. (Parfit 1984, p. 352)

There are again 3 claims that we might interpret the TDC2 to include:

1. *The (weak) Origins Claim:* If a material object has its origin in a certain hunk of matter, it must have had its origin in at least some of its originating matter and thus as human beings have their origin in two gametes, in any possible world, a particular numerical person could possibly exist *iff* they were conceived from at least one of the gametes from which they were actually conceived.
2. *The (weak) Genetic Claim:* Our possession of at least half of our genome is necessarily determinative of our personal identities as they currently stand.
3. *The (weak) Temporal Claim:* The timing of our conception was necessarily determinative of our personal identities as they currently stand and we would therefore not exist had we not been conceived within a month of the time from which we were actually conceived.

According to an understanding of the TDC2 in accordance with The (weak) Origins Claim it would be the case that provided a particular person was conceived from at least one of the actual gametes from which he was actually conceived, it is a possibility that he would be the same person now as he would have been had he been conceived from a different spermatozoon, as such a person would retain at least some of his originating matter.

Thus, a particular biological entity could, in some possible world, be ‘me’ with a different hair or eye colour or have been genetically modified in utero provided the above condition is met and would in fact allow that a particular numerical person could exist with a potential myriad of different genomes resulting from the fertilisation of a particular sperm or egg with any number of different gametes. However, as we have already noted that the TDC1 should not, on the psychological approach, be viewed as a version of *The Origins Claim*, we should for the same reasons agree that the TDC2 should not be viewed as a weaker version of that claim. As such we may read the TDC2 as encompassing only weaker versions of the second and third *Genetic and Temporal Claims*.

When we read the TDC2 in such a way we can note that whilst the temporal claim is easily understood as an environmental claim regarding the fact that a change in environment both pre and post-natally will influence the psychology of those who come to exist, the genetic claim becomes slightly more complicated. For as it is the claim that our possessing the genetic information from *at least* one of the gametes from which we were actually conceived is necessary for our and our counterparts existence, rather than the claim that at least half of our originating genetic material is necessary for our existence, it seems that our existence should

also be a possibility, in not only cases allowed by *The Weak Origins Claim* above, but also a number of cases that any version of *The Origins Claim* could not allow. A particular person could possibly exist had he been conceived not only from at least one of the gametes from which he was actually conceived, but from two different gametes that between them shared at least half of the genetic information present in his originating genetic material or from one or two numerically distinct but exactly similar (cloned) gametes.

An appeal to the TDC2, therefore, meets the above objections levelled against the TDC1 regarding the fact that our genomes do not seem to be as determinative as it suggests. Thus, on the TDC2 the number of relevant counterpart relations are increased so that we should view not only those individuals who share our exact genomes as our counterparts, but also those individuals across possible worlds who share at least half of our exact genomes and those who would have been created from exactly similar (cloned) gametes. By appealing to a weaker *genetic counterpart* relation, we can now increase the number of scenarios in which harm and benefit can be determined prenatally to include cases of foetal and genetic enhancement and the genetic selection of disadvantageous traits. After all, if it were the case that a child whose parents genetically engineered him to be deaf can be said to possess a counterpart who is not deaf, he would possess the property 'could have been hearing' and thus, *if* being deaf constitutes a harm, he could claim to have been harmed by their choice.

Yet, accepting a weaker *genetic counterpart* relation still makes little difference to our determinations of the occurrence of harm in our non-identity cases. For whilst the psychological approach when paired with either version of the TDC allows for the impact of one's environment on numerical identity, our genetic inheritance is still viewed as a necessarily determinative factor in our coming into existence. Thus, in *A Reproductive Dilemma* we can see that regardless of whether we judge that Deborah and Edward should wait to conceive so as to avoid having a child with a disability, acceptance of this weaker relation gives us no reason, in regards to the interests of their resulting child, as to why we should care. For as any child born after the 5 months wait would have been conceived from both a different egg and sperm, the child born after the 5 months wait *could not be* a counterpart of the child born before the 5 months wait because such children would not be in possession of the genetic properties required for counterpart relations. The choice faced by Deborah and Edward remains a decision regarding whom, of two numerically distinct persons who lack the counterpart relation required for determinations of prenatal harm, to create. Similarly, in *The Policymakers choice* whilst we view that *Conservation* is the obvious policy to choose, there is still no person affecting reason as to why this should be the case. For, as according to the TDC a particular person could only exist provided he was conceived within a month of the time from which he was actually conceived and from at least one of the gametes from which he was actually conceived, after 200 years there is likely to be no one in existence in both policies who possesses the properties required for a determination of trans-world identity.

12 Towards a More Holistic Approach Regarding Trans-World Identity in Cases of Alleged Prenatal Harm: Introducing the *Environmental Counterpart*

Despite the fact that the TDC2 can allow for counterpart relations in a great number more scenarios than the TDC1, it still raises a number of interesting questions regarding why it is that half a genome should be viewed as enough to secure the (very slim) possibility that a foetus/embryo could possess the necessary causal properties that would allow us to view them as the counterparts of a genetically distinct foetus but less than half should be viewed as a step too far. Now, readers of this paper might at this point note that the TDC2 should not be viewed in the way in which it has been formulated and should be seen as little more than a concession on Parfit's part regarding the fact that whilst he views it unlikely that we could have been genetically different, as identity is a very fragile thing, answers to the question of whether we could still be ourselves with a slightly different genetic code *are* an epistemological impossibility and we should thus allow for the very small possibility that it *could* be the case.

However, it remains the case that as the TDC2 places the genetic line to be drawn regarding whether a particular foetus possesses the causal properties required for counterpart relations and thus for judgements of preconception harms and benefits at half a genome we *can* charge the TDC2 with arbitrariness or at least with missing the mark in oversimplifying a remarkably complex matter. For it does not seem that it should matter when determining whether any particular embryo possesses the causal properties required for trans-world identity exactly *how much* of a specific genome they are in possession of, but instead, *the extent to which the identity determining features inherent in their genome restrict their future life possibilities* such that the genetic characteristics they possess would preclude the possibility of their being a different particular person.

Thus, whilst the rule imposed by the TDC, regarding the necessity for our existence and thus for the existence of our counterparts at the possession of at least half of our originating genetic material, will often lead to uncontroversial determinations of identity and non-identity in most genesis cases, the TDC, even in its weaker form, leads to some counter-intuitive answers regarding questions of causal identity in certain other scenarios. For example, it will not allow that in a different possible world, a child born to my parents on my birthday and like me in all respects, barring the fact that we possess completely different genomes could be viewed as my counterpart. It will not allow this even if all of the genetic differences between us, by some remarkably unlikely occurrence did not determine any phenotypic differences so that the resultant person would, or could, *ceteris paribus*, look, act and live exactly like me (Wolf 2009, p. 100).

Yet, it will allow for the possibility of my counterpart's existence in a possible world where the two specific gametes from which I was conceived misdivided at some point after fertilisation and was thus born with the mosaic form of trisomy 21 and subject to severe learning and moderate physical difficulties. This person, on any version of the TDC, in possessing my genome in a large percentage of her cells and only a slight variation in a smaller percentage, would be the only candidate in

that possible world for possessing the relevant relations required for determinations of trans-world identity. Of course, as we have already discussed with the case of AN, RN and IDN, the fact that we would be so different from one another would not make much difference to determinations of trans-world identity as counterpart relations are similarity relations and not relations of strict identity.

Despite this, the fact that the latter would still have been a candidate for being my counterpart because she can be identified in that possible world as sharing my genome and the former cannot be, despite all of our similarities, seems, ultimately, to be nothing short of bizarre and it is thus suggested that the TDC2 fails to provide a non-arbitrary account of causal identity on the psychological account. Thus, as the above cases show, the possession of at least half a genome seems to be neither necessary nor sufficient for determinations of counterpart relations. The conception of a child with a completely different genome by my parents at the time of my conception does not seem to necessarily imply that 'I' could not have come to exist and neither does the conception of a child with my exact genome imply that 'I' could.

If we are to accept the possibility that the child mentioned above who was born on my birthday and like me in all respects might be a candidate for being my counterpart due to the fact that we possess a great deal of similarities in terms of the environmental determinants of our identities it becomes the case that on the psychological approach, the 'truth' that the TDC asserts seems to be relatively unremarkable. This is so because whilst it may be *likely* the case that had my parents not conceived me within a month of the time that I was conceived *I* would not, *in fact*, have existed, whether it is *necessarily* the case that I *could* not have existed is a question to which an answer cannot be found regardless of how much and how long we look.

I suggest, then, that environmental factors should also be viewed as relevant for determinations of trans-world identity. For as counterpart relations are relations of objective similarity and we determine such relations by whether trans-world individuals resemble us more closely and in relevant respects than do other individuals in those worlds, that it is a possibility that an individual with an entirely different genome will resemble me more in one possible world than an individual with my specific genome in another, gives us cause to believe that counterpart relations should be determined by not only genetic properties, but also by environmental factors. Indeed, as on the psychological approach it is the sum of all of the causal factors that led to our existence that determines our identity within worlds, with even a slight difference altering identity we can note that just as our possession of our exact genomes was necessarily determinative of our numerical identities in actuality, so too were the environmental factors necessary for our coming to exist.

Thus, if we are able to determine relevant counterpart relations by saying *w* is a counterpart of *x*, where *w* and *x* possess the same/similar genetic code despite the fact that the environmental determinants of their identities were different, we should also be able to determine that *y* is a counterpart of *z* in virtue of their sharing the same or similar environmental determinants of their identities despite the fact that they are in possession of a different genetic code. This claim *is* counterintuitive as

“to envisage an individual as having a different origin is harder, or involves a greater departure from actuality, than to envisage its having a different subsequent history” (Mackie 2006, p. 93), yet its being so, does not make it any less salient.

Indeed, research in developmental psychology points to the fact that the above claim is not as bold as it may at first seem. For certain authors have termed the newly born baby an ‘external foetus’ (Gerhardt 2004, p. 18), or an ‘unfinished embryo’ (Gould 1978, p. 70), in reference to the fact that whilst most of us view that once born, a baby is, in a sense, ‘box ready’. But this is not at all the case. Their genomes do set a blueprint for their development in certain ways. But this blueprint allows for a great deal of customisation by the families and the societies in which they find themselves and a great deal of the environmental factors that influence development influence *both* somatic and psychological systems. The development of the baby’s brain is a good example of this as the brain develops the most in the first year and a half of life and before birth whilst the nerve cell structures are in place, they remain unconnected and only begin the process of creating the connections that allow messages to travel between different parts of the brain after birth (Gerhardt 2004, pp. 18–21). Thus, differences in the persons with whom and the physical environments in which a baby spends much of its early life will cause different psychological *and* physical features to obtain, a fact which also makes a great deal of evolutionary sense as it allows each baby to be “tailored to the circumstances and surroundings in which she finds herself.” (Gerhardt 2004, p. 18)

In accordance with this we should view each potential person as not possessing a potential personal identity in the singular sense, but instead as holding in their grasp a myriad of vague and crude potential personal identities, one of which will eventually develop, depending upon, not only their genomes but environmental and social factors. When viewed in this way the boundaries between different possible persons become weaker, and provided we subscribe to a psychological account according to which what is important in personal identity admits of degrees, we might find relevant shared features between genetically distinct foetuses and distinct differences between different versions of a particular foetus’s potential identities. It might be the case, for example, that some of the possible identities of one particular foetus might be almost identical to the possible identities of other, genetically distinct foetuses, others may share relevant features, and other possible identities of a particular foetus may be so different from one another that apart from being attached to the same sack of DNA are virtually unrecognisable.

Thus, if we have good reason to accept *genetic counterpart* relations, we also have reason to accept as relevant, what I shall call ‘*environmental counterpart relations*’ where an individual shares with another individual across possible worlds, not their distinct genome or a similar genome, but the environmental determinants of their identities such as growing in the same uterine environment, growing up during a particular period in history, the sharing of social parents (or counterparts of their social parents), the sharing of a sibling and other family members (or counterparts of their siblings and other family members), the same cultural positions, and in virtue of this: a particular belief system and memories of very similar childhoods.

Such types of similarity relations are again unlikely to offer us any help in accounting for our intuitions in *The Policy Makers Choice* as the decision that the

policy makers must make will result in both genetic and environmental differences between the individuals created. They do, however, explain why a focus upon causal genetic features is insufficient for determinations of trans-world identity and might in fact help us to understand why it is that we believe that Deborah and Edward would do the right thing in choosing to wait to conceive in the *Reproductive Dilemma*. For whilst it is the case that the children that they could have conceived before and after the 5 months waiting period cannot be seen as *genetic counterparts* it is a possibility that *certain* of the possible identities of each of the possible children in virtue of their shared parentage, familial and cultural positions could have been similar enough in terms of their subsequent histories that we might view them as *environmental counterparts*.

13 A Final Consideration: The ‘Decisional Counterpart’

Might there be another type of counterpart relation to which we can appeal in order to ground claims of harm in non-identity cases such as *The Policy Makers Choice* where *Genetic*, *Branching* and *Environmental counterpart* relations cannot explain our intuitions? It seems unlikely if the only counterpart relations relevant for determinations of trans-world identity are determined by our being causally linked with other persons across possible worlds. The numerical identity of any particular person, defined by relations of connectedness and continuity, cannot be causally determined by anything other than genetic and environmental factors. To be *my/your* counterpart any particular person across different possible worlds must be similar to *me/you* in certain relevant respects. If such relevant respects consist in only whether they are in possession of all, or most of, the causal determinants of our identities, then it seems we have reached our limit when attempting to determine the occurrence of prenatal harm. Yet, there is a different approach to which we might appeal in cases of prenatal harm if we are willing to broaden our approach regarding the kinds of objective similarity relations necessary for determinations of trans-world identity.

I suggest that, in cases of alleged prenatal harm where it is the case that we cannot account for our intuitions by appeal to the causal features that determine identity, what is important about the identity of possible future persons is very similar to a class of views regarding distinctive necessary properties discussed by Parfit in *Reasons and Persons*. The class to which I refer is termed ‘*The Descriptive View*’ and it refers to views that state that our counterparts across possible worlds need not be causally related to us as is the case with *genetic* and *environmental counterparts*, but may instead be persons who can be identified as across possible worlds by the sharing of a definite description. On such views we might identify Immanuel Kant across possible worlds as the person who wrote the *Critique of Pure Reason*, or the person who wrote most of the books that Kant actually wrote such that “in any possible history in which a single person wrote those books that person would have been Kant”. Or we might identify persons across possible worlds via certain specific roles that they inhabit with respect to other persons such that as I possess the role ‘second daughter’ in relation to *my* ‘parents’ any person across

possible worlds who also possesses the role of ‘second daughter’ in relation to ‘parents’ who are counterparts of my parents might be identified as my counterpart.

Parfit dismissed such a view as being “too implausible to be worth discussing”, noting: “I am the second of my mother’s three children. This claim implies absurdly that, if my mother had conceived no child when she in fact conceived me, I would have been my younger sister.” (Parfit 1984, p. 354) Yet, whilst this observation is well made, the notion that we might identify persons across possible worlds by reference to certain descriptive terms as opposed to their causal properties is not so absurd that a number of philosophers have not attempted to define our moral responsibilities regarding possible persons in this manner. Clark Wolf, for example, notes in a paper regarding the non-identity problem:

Where the question involves responsibility, our theory concerning the identity determining characteristics of future persons should capture what is significant about them from the *moral* point of view, and this may be quite different from other senses of identity that we use to individuate persons for other reasons, or within other theories and projects... Once we recognize that the articulation of the [non-identity problem employs a very specific concept of “identity,” and recognize in addition that different conceptions of “identity” are appropriate in different circumstances, we have new resources to address this problem. To find a non-arbitrary criterion, we need to identify the conception of “identity” that is appropriately employed in cases where the non-identity problem seems to arise. (Wolf 2009, pp. 105–107)

Inspired by a rather tentative footnote where Maclean suggests that “Perhaps we should insist on a person-affecting criterion for harm but a place-holder criterion for wrong” (Maclean 1983 cited in Wolf 2009, p. 106), and Hare’s concept of *de dicto* wrong (Hare 2007)⁷ he suggests that we may find what is significant about future persons from the moral point of view in cases of alleged prenatal harm by referring not to a numerical account of personal identity or to the causal properties that allow such identities to develop, but instead to the identities of future persons as particular place-holders. Thus, he proposes that in cases of alleged prenatal harm the morally significant feature to which we should refer is that of their being “the class of persons whose interests will be influenced as the consequences of our present choices”, and that as such “the putatively different people we might bring into existence are all the same from the moral point of view” (Wolf 2009, p. 108) in virtue of their holding of this feature.

Such an approach is not as bizarre as it may first look as it is the case that in the eyes of others quite often what is important about us in the moral sense seems to have less to do with our numerical identities and more to do with our possession of certain roles. For example, it is the case that I, to those responsible for my

⁷ Harm *de re*: where S1 and S2 are the possible states of affairs resulting from a decision x is subject to a *de re* harm when it is the case that the thing that is actually x’s interests are left in a worse condition in S1 than S2, and we choose S1. Wrong *de dicto*: where S1 and S2 are the possible states of affairs resulting from a decision, x is subject to a *de dicto* wrong when the *thing* that occupies the position of x in S1 is worse off than the thing that occupies the position of x is in S2 and the decision maker who, in *normal circumstances*, would have a *de re* duty to choose S2 chooses S1.

conception, as well as being identifiable as the numerical person ‘Nicola Jane Williams’ inhabit a certain role, that of ‘daughter’. My inhabiting such a role entailed certain partial duties on their part when I was still a child. They, in choosing not to give me up for adoption, accepted a role that required that they take appropriate steps, whilst I was unable to look after my own interests, to look after them for me. They accepted a moral and legal obligation to prefer, *ceteris paribus*, to feed and clothe me and to ensure that I was happy and healthy, than to feed and clothe and ensure that some other child who was not *their* child was happy and healthy. Yet such duties would have obtained regardless of who inhabited the role of ‘daughter/son’ provided there was someone that *actually* inhabited that position. Had they chosen to give me up for adoption, they would be subject only to obligations that obtain between them and I in virtue of my being a person. Indeed, now that I have reached majority their duties to me *have* changed despite the fact that my numerical identity remains the same, although they are still partial to me, preferring, for example, to bail me out of dire financial straits than strangers. I am also both a British and European citizen. Those in government have a duty to represent my interests locally, nationally and internationally in virtue of my role as citizen but they cannot really be said to possess a duty towards *me*. For should it be the case that I chose to relinquish my citizenship, their duties would no longer apply, as the duty to protect my interests as a citizen applies not to me ‘the person’ but to whomever happens to inhabit the role of citizen.

Indeed, we can see too that in certain cases, conventional, non-role specific obligations seem to attach less to the numerical identities of others and more to ‘anyone who might be affected by our actions’ as when we “Consider the obligation not to shoot bullets into the woods when one cannot see whether there is anyone there, or the obligation to care for one’s brakes in case one needs to stop suddenly for a pedestrian.” (Wolf 2009, p. 109)

As such, I suggest that there is a further type of counterpart relation relevant for cases of prenatal harm. A counterpart relation that identifies persons across possible worlds by reference to certain descriptive properties as constituting a relevant relation of objective similarity, the property of being the result of a particular decision made by a particular person at a particular time. After all, that one’s existence is contingent upon a decision made by a particular decision maker at a particular time and so is the existence of certain other persons across possible worlds is most definitely a similarity. As it is the case that our questions regarding the occurrence of prenatal harms hinge upon our consideration of this very similarity, such a similarity should be viewed as relevant to our moral decisions. Such a counterpart relation is thus formulated as follows:

The Decisional Counterpart: where a particular numerical person *x*’s existence is contingent upon a decision made by agent *y* at a particular time (*t*), across possible worlds those whose existence is also contingent upon the same decision made by counterparts of *y* who are indiscernible with *y* at *t* should be viewed as *x*’s counterparts.

By employing the *Decisional counterpart* relation in addition to *Branching*, *Genetic* and *Environmental counterparts* it is suggested that those of us who subscribe to a psychological account of personal identity can find an answer that

satisfies both our intuitions and the person-affecting principle in cases such as *A Reproductive Dilemma* and *The Policy Makers Choice*. For in *A Reproductive Dilemma* we can note that not only might some of the possible children of Deborah and Edward be viewed as counterparts across possible worlds in virtue of their sharing an *Environmental counterpart relation*, their being the result of a decision made by Deborah and Edward/Deborah and Edward's counterparts, at a particular time of whether to wait or not to wait to conceive constitutes a *Decisional counterpart relation*. Similarly in *The Policy Makers Choice* we can note that whilst none of the possible results of the policy decision across possible worlds may be viewed as *Genetic* or *Environmental counterparts*, in being the result of the decision made by the policy makers or their counterparts, those who are the result of whichever decision is made should be viewed as counterparts in virtue of their being the result of that decision. Thus, provided in both cases we are able to determine that certain of one's counterparts across possible worlds are better off in virtue of a different decision having been made, we have the required basis for determining the occurrence of prenatal harm.

14 Conclusion

Within this paper the question of when and whether it is possible to determine the occurrence of prenatal harm in accordance with both a psychological account of personal identity over time and a person affecting account of harm was addressed. It has been shown that whilst it may initially seem hard on such an approach, provided we utilise a causal account of identity when answering such questions, it is possible to have meaningful discussions regarding the occurrence of harm in prenatal cases despite the fact that no fetuses and persons can ever be said, in an evaluative sense, to share an identity.

Parfit's account of the causal properties that determine existence across different possible histories of the world was then explained and examined and it was suggested that the way in which it is generally read, as a version of Kripke's necessity of origins claim, is not appropriate on the psychological account. It was suggested that it is better to read such claims in terms of Lewisian Counterpart Theory according to which claims such as the TDC are true when they pick out individuals across possible worlds as sharing a trans-world identity in virtue of their being similar to each other in certain relevant respects and to certain relevant degrees. After this it was argued that *if* persons across possible worlds can be said to share an identity across worlds when they fulfil the conditions of the TDC, we have good reason to expand our approach regarding the kinds of features that determine trans-world identity to include both weaker genetic relations and also environmental features that determine identity in a similar way. Finally, it was suggested that we might appeal to another kind of counterpart relation determining trans-world identity in prenatal cases by not only the features that lead to the development of one as opposed to another psychology but via appeals to the conditions of each person's existence. According to such counterpart relations, when across possible worlds one's existence hinges upon a decision made by a particular decision maker

at a particular time all of those individuals whose existence hinges upon that same decision at that same time by that decision maker's counterparts should be viewed as one's counterparts in virtue of this.

Yet, whilst the fact that harm *can* be determined in prenatal cases by appeals to both strong and weak *genetic counterpart* relations, *environmental counterpart* relations and *decisional counterpart* relations constitutes a major step forward in the debate, work still needs to be done. That harm *can* be determined does not, for example, necessarily mean that such harms cannot be justified in certain cases by appeals to other considerations or that the harm claims generated will be strong enough to warrant the infringing of reproductive autonomy in micro cases of prenatal harm such as the *reproductive dilemma*. Nor indeed does the fact that harm can be determined in micro cases such as the reproductive dilemma mean that those responsible for the existence of an individual with a harm claim are necessarily responsible for the harm incurred by their offspring. For whilst the external features of particular possible worlds such as is the case in *the policy makers choice* might straightforwardly be determined as not particularly conducive to the living of a good life, and thus, harmful to any person that is subject to them, that all disadvantageous genetic features should be viewed as intrinsically harmful is not so apparent. Disability itself need not always inhibit flourishing, and a better way to mitigate the person affecting harms associated with disability may well be to alter the structure of society so that such traits are no longer disadvantageous, rather than to alter the numerical identities of the players themselves. Thus, whilst the fact that harm can be determined in prenatal cases and such harms can be viewed as attaching to possible persons is *good enough* for this paper, the debate regarding who is responsible for such harms, which harms can be justified and the actions we should take when responding or attempting to prevent such harms is one that, for now, remains open.

Acknowledgments I am extremely grateful to Rebecca Bennett for her provision of generous written and verbal comments on countless written drafts of this paper over the last year, and to members of the Institute for Science, Ethics and Innovation and the Centre For Social Ethics and Policy at the University of Manchester for their comments on early verbal versions of this paper during seminars. I would also like to express my gratitude towards Sheelagh McGuinness who provided detailed feedback on a much earlier version of this paper and to both Susan Williams and Ema Sullivan-Bissett for their helpful comments on structure and style as well as the Arts and Humanities Research Council who provided me with the funding without which I would never have been able to undertake this project.

Open Access This article is distributed under the terms of the Creative Commons Attribution License which permits any use, distribution, and reproduction in any medium, provided the original author(s) and the source are credited.

References

- Adams, Robert M. 1979. Existence, self-interest, and the problem of evil. *Nous* 13(1): 53–65.
- Belshaw, Christopher. 2000. Identity and disability. *Journal of Applied Philosophy* 17(3): 263–276.
- Bennett, Rebecca. 2009. The fallacy of the principle of procreative beneficence. *Bioethics* 23(5): 265–273.

- Divers, John. 2007. Quinean scepticism about de re modality after David Lewis. *European Journal of Philosophy* 15(1): 40–62.
- Feinberg, Joel. 1992. *Freedom and fulfilment*. Princeton: Princeton University Press.
- Gerhardt, Sue. 2004. *Why love matters: How affection shapes a baby's brain*. London: Routledge.
- Gould, Stephen J. 1978. *Ever since Darwin: Reflections in natural history*. London: Burnett Books.
- Hare, Caspar. 2007. Voices from another world: Must we respect the interests of people who do not, and will never, exist? *Ethics* 117(3): 498–523.
- Harris, John. 1985. *The value of life*. London: Routledge.
- Heyd, David. 2009. The Intractability of the Nonidentity Problem. In *Harming future persons*, eds. Melinda A. Roberts, and David Wasserman, T, 3–25. International Library of Ethics, Law and the New Medicine London: Springer.
- Kavka, Gregory S. 1982. The paradox of future individuals. *Philosophy & Public Affairs* 11(2): 93–112.
- Kripke, Saul A. 1980. *Naming and necessity*. Revised and enlarged ed. Oxford: Blackwell.
- Leibniz, Gottfried W. 1989. *Philosophical Essays*. Trans. R. Ariew, and D. Garber. Indianapolis: Hackett.
- Lewis, David K. 1971. Counterparts of persons and their bodies. *The Journal of Philosophy* 68(7): 203–211.
- Lewis, David K. 1986. *On the plurality of worlds*. Oxford: Blackwell.
- Locke, John. 1924. *An essay concerning human understanding*. Oxford: Clarendon Press.
- Mackie, Penelope. 2006. *How things might have been: Individuals, kinds and essential properties*. Oxford: Oxford University Press.
- McMahan, Jeff. 2003. *The ethics of killing: Problems at the margins of life*. Oxford: Oxford University Press.
- Meacham, Christopher J.G. 2012. Person-affecting views and saturating counterpart relations. *Philosophical Studies* 158(2): 257–287.
- Olson, Eric, T. 1999. *The human animal: Personal identity without psychology*. Oxford: Oxford University Press.
- Parfit, Derek. 1984. *Reasons and persons*. Oxford: Clarendon Press.
- Schwartz, Thomas. 1978. Obligations to posterity. In *Obligations to future generations*, eds. R. Sikora, and B. Barry, 3–13. Philadelphia: Temple University Press.
- Thomson, Judith J. 1997. People and their bodies. In *Reading Parfit*, ed. Jonathan Dancy, 202–229. Oxford: Basil Blackwell.
- Tooley, Michael. 1972. Abortion and infanticide. *Philosophy & Public Affairs* 2(1): 37–65.
- Wolf, Clark. 2009. Do future persons presently have alternate possible identities? *Harming future persons; ethics, genetics and the non identity problem*, eds. M. A. Roberts, and D. T. Wasserman, 93–114. New York: Springer.
- Wrigley, Anthony. 2006. Genetic selection and modal harms. *The Monist* 89(4): 505–525.
- Wrigley, Anthony. 2012. Harm to future persons: Non-identity problems and counterpart solutions. *Ethical Theory and Moral Practice* 15(2): 175–190.